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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,173	07/30/2001	Fred S. Miller	IL-9232	2631

7590 07/08/2005

Alan H. Thompson
Assistant Laboratory Counsel
Lawrence Livermore National Laboratory
P.O. Box 808, L-703
Livermore, CA 94551

EXAMINER	
SIEFKE, SAMUEL P	
ART UNIT	**PAPER NUMBER**
1743	

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/919,173	MILLER ET AL.	
	Examiner	Art Unit	
	Samuel P. Siefke	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claim 11-25 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims **11-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Daitch et al. (USPN 6,447,991) in view of Sigman et al. (USPN 6,645,908) and in further view of Risen, Jr. et al. (USPN 6,303,046).

Daitch teaches a method of using a smart aerogel for detection of airborne contaminants. The method comprises providing a doped aerogel sample, passing an airborne contaminant (bioaerosol) through an aerogel sample, removing the aerogel sample and assaying through wet chemistry processes to determine how much and what kind of biolmolecules the smart aerogel sample adsorbed (col. 8, line 63-col. 9, line14). The aerogel sample can be made of multifunctional materials with unique properties that enable one to adsorb airborne contaminants (col. 1, line 55-col. 2, line 25; 3, line 31-64). The aerogel can be selected to render results as highly selective or relatively selective (col. 7, line 57-col. 8 ,line 28).

Daitch does not specifically teach crushing the aerogel before use, but does teach controlling the aerogel pore size. Daitch discusses aerogels having macropores larger than 100 nm in order to trap microorganisms. Bacteria and Rickettsia fall within the macropore range (col. 5, lines 11-59).

It is known in the art that crushing an object will create particulates which allow a greater surface area than the whole object. A greater surface area for adsorption is very much like providing an aerogel with macropores, capable of adsorbing large microorganisms. It would have been obvious to modify Daitch to include crushing an aerogel as an alternative to controlling pore sizes in order to provide an increased surface area for adsorption of microorganisms.

Daitch does not also specify that the aerogel is analyzed by observing a color change in the aerogel absorbate or detecting the airborne material by GC/MS. Diatch does teach removing the aerogel sample and analyzing the sample through wet

chemistry processes to determine how much and what kind of biolmolecules the smart aerogel sample absorbed (col. 8, line 63-col. 9, line14).

Sigman teaches a sol-gel derived sorbent analyzing method that comprises analyzing a sol-gel sorbent by gas chromatography/mass spectrometer (col. 9, line 61-col. 13, line 4). It would have been obvious to one having an ordinary skill in the art to modify Daitch to detect the airborne material by GC/MS because it is known in the art of analyte detection that GC/MS methods are routinely used to detect and quantify unknown analytes in a sample.

Risen teaches aerogel materials and detectors employing aerogel materials that comprise; the aerogels transparency to light in certain wavelength regions. Absorption of gases by the aerogels can cause a color change in the aerogel. Gases that are absorbed by the aerogels are CO, H_2, H_2O, NH_3, CO_2, N_2O_4, NO, and NO_x. Thus, gas absorption can be detected using the aerogel as the detection element and a suitable light source and detector. Absorption of gases which cause changes to the infrared or near infrared spectrum of the aerogels in the region where the aerogels have a spectral transmission of greater than about 10% provides an element for a detector for those gases (col. 6, lines 1-23). It would have been obvious to one having an ordinary skill in the art to modify Daitch to employ an aerogel that can absorb a gas and produce a color change because it would provide a quick determination of gas in an environment without the need for expensive laboratory equipment to determine if the gas is present.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel P. Siefke whose telephone number is 571-272-1262. The examiner can normally be reached on M-F 7:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1700. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam P. Siefke

June 29, 2005

YELENA GAKH
PRIMARY EXAMINER